

Taking the Pulse:

# PHYSICIANS AND THE INTERNET

Executive Summary

# A Health Care Study by Cyber Dialogue Inc. and Deloitte Research

*Taking the Pulse* is the latest research initiative of Deloitte Research and Cyber Dialogue Inc. and an integral part of our ongoing effort to understand, analyze, and explain the critical drivers accelerating the emerging e-Health revolution. The first study, *The Emergence of the e-Health Consumer*, offered an analysis of the key forces impacting the e-Health sector today. The second installment, *Winning the Loyalty of the e-Health Consumer: Building an e-Business Roadmap*, offered insight from in-depth interviews, surveys, and roundtable discussions with health care executives, employers, physicians, and consumers regarding the services e-Health consumers value, and who they trust to offer those services. The latest in our series, *Taking the Pulse: Physicians and the Internet*, zeroes in on the physician experience with and attitudes about the Internet, most significantly related to connectivity with health care consumers and patients. As our previous reports indicated, devising and implementing a physician-to-consumer (P2C) connectivity strategy is critical to success in this rapidly evolving e-Health space. For this reason, we launched a research initiative aimed at understanding the role of the Internet for the physician audience today and in the future, the interaction between physicians and their patients, and the implications for established and emerging e-Health players.

We have recently heard that “doctors hate the net,” suggesting that they are technophobes and raising doubts that they will ever be online in force. In most cases the Internet has not impacted how they practice medicine today. And clearly engaging physicians requires a demonstrable impact with respect to time, money, and quality. However, while physicians are currently “Web-resistant” in many ways, the underlying reasons are somewhat more complex. As with other well-educated consumers with higher than average incomes, the Internet has actually become part of their non-professional lives. While the use of advanced connectivity services, such as online medical records, online prescribing, and payor connectivity is all but non-existent today, there is indeed excitement about the future in general.

The vast majority of physicians expect their online usage to increase much more over the next five years and many are interested in implementing online services. Critical factors for success include integrating technology into workflow at the patient point-of-care, addressing privacy/security concerns, and demonstrating how online technologies and services will help them practice medicine more efficiently and effectively.

The primary intent of this study is to develop and present a knowledge base to help health care executives and other financially interested parties, including Internet companies, better understand the key issues surrounding physicians and the Internet. This research serves as a foundation to clarify what is happening today, a strategic planning document to identify both the obstacles to and opportunities for success, and a framework to guide strategy development and investment planning in the future.



## Physicians and the Internet: Extending the Medical Analogy— Diagnosis, Treatment, and Prognosis

The Internet revolution continues in health care. Just as the Internet is forcing health care companies to rethink traditional business models, it is also empowering consumers with broad access to information, and giving physicians the ability to communicate and access global reference material in real-time. Our past research efforts have focused on the role and influence of e-Health consumers today and in the future. While we are in agreement that consumers are becoming empowered and will eventually wield more influence, the truth remains that physicians essentially control the delivery of health care today. Because of their clinical and financial decision-making authority and their close link to patients/consumers, physicians are expected to serve as the critical nexus in an Internet-mediated health care information system in the near future. Despite the critical role physicians could play, their acceptance and adoption of e-Health professional services and applications has lagged. Yet to fulfill the Internet's promise in health care, physicians must not only be onboard but also be a driving force for change. Engaging and involving physicians is a challenge; meeting it requires, first and foremost, understanding and addressing their current, apparent lack of enthusiasm.

By "*taking the pulse*," our research seeks to understand this challenge by looking beneath the superficial symptoms and trying to discover the root cause. Following up on our medical analogy, we are trying to diagnose the underlying problems as accurately as possible in order to better understand the implications, and prescribe the most appropriate course of action or treatment for all interested parties: physicians, Internet companies, other health care industry players, and even public policy makers.



The conventional rationale for physicians' attitude toward the Internet and its general implications for the future of e-Health was captured recently by the *New York Times*,

*Computer types are even more dismayed when they look elsewhere in the notoriously inefficient healthcare system, particularly at the task of persuading the nation's harried, technology averse doctors to wire their practices. Stocks of companies like WebMD and Medscape soared last winter, then dropped even faster when the gap between medical and Silicon Valley perspectives became apparent.*

— Steinhauser, *New York Times*, 10/25/00

An incorrect diagnosis can have serious implications. It can lead to selecting an inappropriate treatment option, in this case the choice of strategy to get physicians Web-engaged. Even worse, believing that physicians resist technological advances creates undue pessimism about their central role in e-Health and the future promise of the Internet for improving efficiency and quality in health care, as the *New York Times* noted. However, the evidence presented by our research supports a very different diagnosis, suggesting a number of targeted treatments and, as a result, implies a much more rosy prognosis.

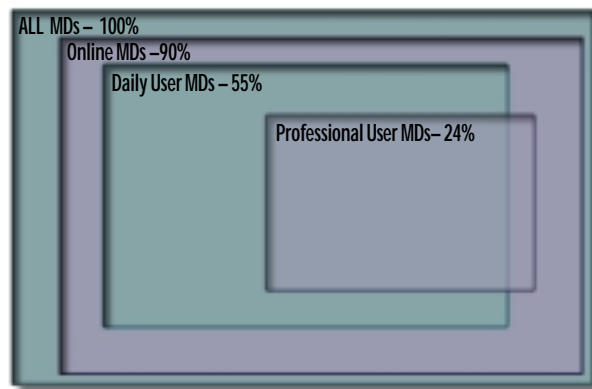
If we know doctors are not ready to migrate their practices and professional lives to the Web, what do our results show and what does the future hold? The good news is that, by and large, doctors are not the technophobes they have been portrayed in recent years. Like other well-educated and affluent Americans, physicians have embraced the Web. They are doing the same things most well-to-do Americans do online: They track investments, use online banking and stock sites, plan travel and vacations, and communicate with friends and family. Although the vast majority of practicing physicians already use the Web, we know it has not become critical to the way they practice medicine or to their professional practice. Stated another way, if the Internet disappeared today most physicians would continue to practice medicine and conduct their businesses as they always have. This is not to say they have no interest in using the Web for clinical care and administrative tasks in the future, but rather that they have not found the applications or services that demonstrate clearly how the Web can help them increase professional revenues, reduce expenses, save time, or improve the quality of care for patients.

## Survey Results: Diagnostic Findings

While data collected for this survey are rich and extensive, this overview presents only the main findings in three important areas that best highlight physicians' current and future experience with the Internet:

- 1) The numbers of physicians who currently use the Internet and to what extent;
- 2) The nature/extent of their current and expected future online activities, especially related to P2C (physician-to-consumer) connectivity;
- 3) Physicians' attitudes and expectations about the value of the Internet and its impact on their practices.

FIGURE 1. PHYSICIANS BY TYPE



### DEFINITIONS:

**Online MDs:** Access the Internet at any time over the last 12 months

**Daily User MDs:** Access at least daily for any reason

**Professional User MDs:** Not necessarily a daily user but 75% of time online is for "professional" purposes

SOURCE: DELOITTE RESEARCH AND CYBER DIALOGUE INC.

### Physicians Online

Currently, the vast majority of physicians claim to have at least some level of interaction with the Web. Ninety percent of practicing physicians have accessed the Web at some time in the past 12 months, 82 percent describe their online usage as weekly, and 55 percent as daily (Figure 1). Another segment we studied is the group of professional users – those users who spend at least 75 percent of their time online for professional purposes – a group that is equal to 24 percent of the physician population. Particular attention should be paid to responses of both the daily and professional users considered to be Internet "early-adopters." They provide a useful benchmark for understanding and

predicting future behavior among physicians in general. As a whole this group has been more inclined to adopt Internet solutions and innovations and so might be considered a convenient target for new Internet products and services. As the following pages show, however, even these most Web-predisposed physicians still believe that there is room for improvement in what's currently available on the medical Internet.

The distribution of Internet early adopter physicians does not vary much across practice settings, with one exception (see Table 1). Professional users are more likely to be located at, or affiliated with academic medical centers. This is not surprising; physicians in these locations may be more interested in keeping up-to-date online in conjunction with ongoing research activities. As recent news articles have shown, a number of academic medical centers, including Harvard's Beth Israel teaching hospital, give affiliated physicians ready access to online clinical and information services by building on a pre-existing information infrastructure. Size and an active research environment may give them a substantial advantage when it comes to some aspects of Internet migration.

TABLE 1. PRACTICE SETTING

	PERCENT OF PHYSICIANS BY TYPE			
	Prof	Daily	Online	All
Solo	45%	47%	47%	48%
Single Specialty Group	27%	26%	28%	28%
Multi-Specialty Group	7%	12%	13%	13%
Academic Medical Center	13%	6%	5%	5%
Hospital	3%	4%	2%	2%
Other	5%	5%	5%	5%
All Settings	100%	100%	100%	100%

SOURCE: DELOITTE RESEARCH AND CYBER DIALOGUE INC.

## Online Activities

The Internet has become part of the average doctor's lifestyle but it is often not critical to how he or she practices medicine. This statement is further validated when looking at what doctors actually do online today – and perhaps more importantly – what they do not do online. Leading online activities for physicians are fairly basic and include: searching literature databases, accessing journals online, communicating with colleagues, visiting medical information sites, and searching for patient education material. For the most part, these activities are related to accessing information in a way that is often faster, easier, and cheaper than is possible offline today (see Figure 2).

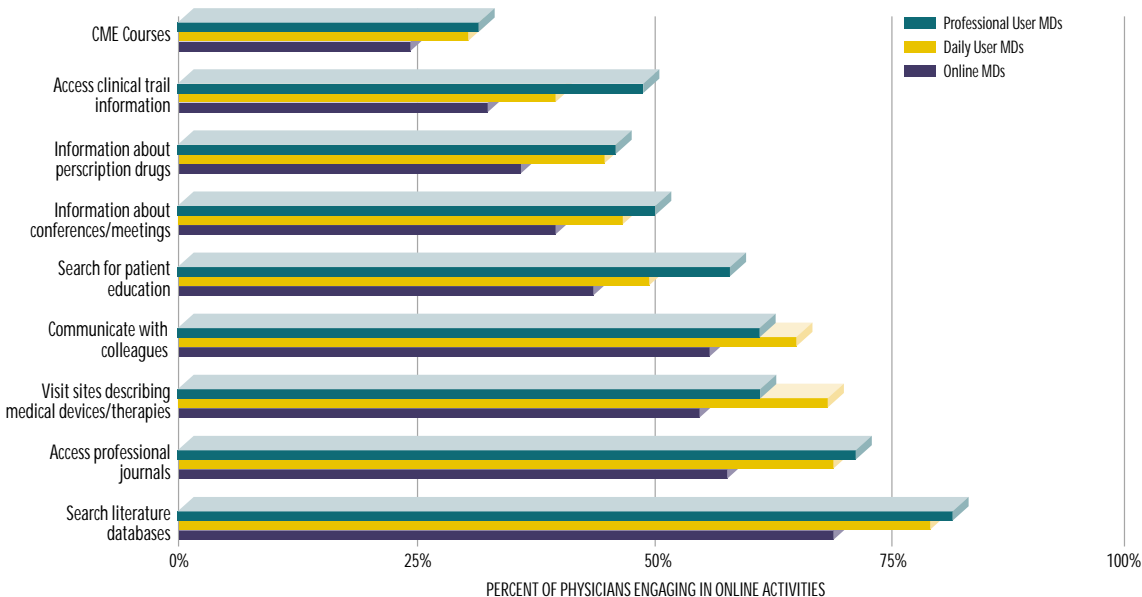
A major area of interest is the realm of physician-consumer connectivity. In large part this is driven by health care consumers' and patients' interest in wanting to e-mail their physicians. Our previous study – *Winning the Loyalty of the e-Health Consumer* – suggests substantial demand for a wide range of online interactions with doctors. In addition to interest in using these services, some consumers would also be willing to pay and/or switch plans to get this type of service. This demonstrates the reality that consumers can effectively represent an important economic force when it comes to e-Health. Because of such intense consumer interest, assessing physicians' use of and attitudes about patient e-mail is critical for understanding the potential for this basic e-Health application (see Table 2).

TABLE 2. USE OF AND ATTITUDES ABOUT E-MAIL WITH PATIENTS

	PERCENT OF PHYSICIANS BY TYPE			
	Prof	Daily	Online	All
<b>Currently using e-mail with patients</b>	30%	25%	21%	NA
<b>Activities with patients online:</b>				
■ Routine prescription refills	8%	15%	13%	NA
■ Billing inquiries	22%	21%	19%	NA
■ Scheduling appointments	22%	21%	24%	NA
■ Notification of test results	29%	30%	29%	NA
■ Discussing symptoms or treatment options	63%	65%	61%	NA
<b>Level of interest in e-mail with patients = HIGH</b>				
<b>Already using, interested or very interested in future</b>	41%	34%	30%	28%
<b>Reasons for not currently using e-mail with patients:</b>				
■ Not reimbursed for online activity	44%	41%	44%	44%
■ Concern about professional liability	63%	62%	62%	62%
■ Concern about too many patients sending e-mail	65%	64%	67%	66%
■ Prefer face-to-face interaction	77%	81%	80%	82%

SOURCE: DELOITTE RESEARCH AND CYBER DIALOGUE INC.

FIGURE 2. ONLINE ACTIVITIES



SOURCE: DELOITTE RESEARCH AND CYBER DIALOGUE INC.

Compared with existing physician-patient communication channels, e-mail offers an opportunity to improve the efficiency and quality of interaction both from the physicians' and the patients' perspectives. However, e-mail is not likely to be used in the same way and to the same degree with all patients; online communication tools will be much more appropriate for some patient populations than others. For example, e-mail may provide the most advantages for chronically ill patients. It allows for ongoing monitoring of health status and may improve compliance with therapy, reducing the cost of treatment and improving the quality of care. Although physicians have some serious financial and technical concerns about e-mail communication with patients, if well managed, there are substantial benefits.

TABLE 3. ONLINE MDS: USE OF AND ATTITUDES ABOUT ELECTRONIC MEDICAL RECORDS

	PERCENT OF PHYSICIANS BY TYPE		
	Prof	Daily	Online
<b>Currently using EMR</b>	13%	9%	7%
<b>Level of interest = HIGH</b>			
<b>Already using, interested or very interested in future</b>	35%	34%	28%
<b>Reasons for not currently using EMR:</b>			
■ Hardware is outdated	25%	23%	25%
■ Lack of good services	39%	32%	32%
■ Unwilling to pay for services	52%	44%	45%
■ Lack of standards for online records	54%	52%	49%
■ Unwilling to enter historical data	52%	53%	57%
■ Privacy or security concerns	73%	69%	70%

SOURCE: DELOITTE RESEARCH AND CYBER DIALOGUE INC.

TABLE 4. ONLINE MDS: USE OF AND ATTITUDES ABOUT E-PRESCRIBING

	PERCENT OF PHYSICIANS BY TYPE		
	Prof	Daily	Online
<b>Currently doing e-prescribing</b>	7%	4%	4%
<b>Level of interest = HIGH</b>			
<b>Already using, interested or very interested in future</b>	31%	29%	25%
<b>Reasons for not currently doing e-prescribing:</b>			
■ Hardware outdated	26%	25%	27%
■ Lack of good services	30%	32%	32%
■ Unwilling to pay for online services	47%	48%	50%
■ Not used by all pharmacies/payers	55%	55%	52%
■ Privacy or security concerns	59%	59%	61%

SOURCE: DELOITTE RESEARCH AND CYBER DIALOGUE INC.

Two other areas with important Internet applications for physicians are the use of electronic medical records (EMR) and the use of the Internet for pharmaceutical prescribing. As Tables 3 and 4 show, the greatest use of these is by professional users. However, even professional users have fairly low adoption rates: 13 percent for EMR and 7 percent for e-prescribing. All three groups of online physicians who do not use EMRs and e-prescribing show identical concerns and reasons for non-use, strongly related either to confidentiality or the financial impact of adopting such systems.

## Physician Attitudes

Although we know that a relatively high percentage of physicians is online, we also know that this has not impacted the way they practice medicine. Only 21 percent of physicians agree with the statement: “The Internet is essential to my practice today.” Fifty-nine percent feel it has not become essential. The remainder of the population is neutral. While a higher percentage of early adopter physicians believes the Internet is essential, this is still not the majority of this Web savvy subset. This tells us that physicians have not yet embraced the Internet in their professional lives in the same way they have on a personal level. While a relatively small audience of early adopters is using the Internet in the workplace and for professional reasons, most limit their clinical time online to basic activities such as searching article abstracts and reading journals. Converting the 59 percent of physicians who do not feel the Internet is essential requires the ability of e-Health players to understand not only the needs of physicians as they exist today, but also to recognize how those needs are changing over time and how technology and the Internet can improve efficiency and quality of care.

Just as a large percentage of physicians does not feel the Internet is essential to their practice today, an even larger group of physicians believes that they will increase their reliance on the Internet within five years. Consistent with their interest in a number of services, physicians believe the Internet will become an invaluable tool, linking patients, providers, payors, pharmaceutical companies, and physicians, to facilitate communication and reduce administrative headaches. In fact, 59 percent of physicians agree with the statement: “The Internet will radically improve connectivity among patients, providers, and payors.”

TABLE 5. INTERNET ATTITUDES: PERCENTAGE OF PHYSICIANS WHO AGREE OR STRONGLY AGREE

	Prof	Daily	Online	All
<b>Current General Impressions</b>				
■ The Internet is essential to my practice	32%	28%	22%	21%
■ The Internet improves my practice efficiency	20%	19%	18%	15%
■ Internet is making a physician's job more difficult than 5 years ago	24%	19%	22%	23%
<b>e-Communication</b>				
■ Online communication adds to my already busy workflow	58%	51%	57%	57%
■ I am concerned about the liability of online communication	68%	64%	65%	65%
<b>Interaction with patients</b>				
■ I am concerned that online communication will replace office visits	21%	18%	19%	20%
■ It's a good thing when patients bring the results of net searches with them	60%	57%	55%	54%
<b>Privacy</b>				
■ The Internet is a threat to my personal privacy	24%	21%	25%	25%
■ The Internet is a threat to the personal privacy of my patients	37%	37%	37%	36%
<b>The Future</b>				
■ I will rely on the Internet more in 5 years	76%	78%	73%	71%
■ The Internet will radically improve communications among patients, providers and payers	63%	63%	61%	59%

SOURCE: DELOITTE RESEARCH AND CYBER DIALOGUE INC.



## Bottom Line: Principal Diagnosis

Despite the efforts of many e-Health companies to promote online services for doctors today, our results show that the Internet has not yet become critical to the medical profession or within medical practices. Most doctors simply do not see the value proposition (time, money and quality impact) to justify using the Web or online applications in their practices, learning new systems or redesigning work processes to accommodate online services or data entry devices at the point of care. Most physicians are not technophobes, but they do face a number of obstacles in migrating to the Internet in a meaningful way.

While there are a few important technological concerns, related mostly to patient data security, the main obstacles to adoption are purely economic. In an era dominated by managed care, physicians already feel financially squeezed. Adoption of online services adds to their financial burdens in a number of distinct ways:

- 1) The up-front and out-of-pocket costs of information system (hardware and software) investment;
- 2) Monetary opportunity (time) costs of learning and using a new system;
- 3) Potential financial risks related to increased professional liability with EMRs and e-mail;
- 4) The financial risks of making an incorrect information system decision and investment: Physicians' sensitivity to this risk may now be heightened as the stocks of Internet (including e-Health connectivity) companies have plummeted over recent months.



## Proposed Treatment and Prognosis: Implications for Health Care Sectors

Who benefits from getting physicians online? Understanding who benefits is crucial to assessing the likely impact of Internet adoption by physicians on the private market players, including health care companies as well as Internet companies. Certainly online technologies can improve administrative efficiency, reduce medical errors, increase the effectiveness and efficiency of marketing, and enable communication between patients and their providers. These expected benefits are a return on investment and so knowing who benefits is key to understanding who must be willing to make strategic investments to enable or promote adoption of Web services by physicians. In each of the following sections we look at the implications by sector and list the reasons how and why each sector should think strategically and make investments to facilitate physician connectivity.

### Payors

HMOs can expect to gain from online connectivity between the payor community, providers, and consumers. According to Bill McKeever, HMO industry analyst at UBS Warburg, "Healthcare is one of the most inefficient businesses in the US economy. Of the \$1 trillion spent on healthcare in the US in 1998, an estimated \$250 billion was spent on administrative waste, incompatible systems and redundant tests." Not only would better (Internet) information systems increase overall health care efficiency, according to McKeever and other Wall Street analysts, the successful adoption of such systems could help the HMOs directly by radically improving Wall Street's perception of the industry's investment potential. Additionally, there is currently a growing demand for online services. Although employers are still considered the primary audience for most health plans today, responsiveness to consumer and physician needs will certainly help plans differentiate themselves from the competition.

Moreover, of all players in the market, payors seem to be best positioned to carry out this task. As J.D. Kleinke recently explained:

*Unlike chronically fragmented providers, mis-funded government agencies, and employers focused on their core businesses, third party payors have the critical mass, and relatively easy access to funding to effect true interconnectivity. Payors also have the closest thing to a connectivity mandate: They are already in the transaction processing business.*

– Kleinke, *Health Affairs*, November/December 2000

So why has the payor community not embraced the concept of connectivity with providers and consumers more aggressively? From the internal perspective, most insurance companies rely on a foundation of legacy information systems. In most cases, scrapping this investment to start over is not an option. Getting these systems to support communication and coordination online often requires a very large financial commitment. Creating the ability to offer services such as researching covered services, tracking claims, and verifying eligibility will take time for most health plans, since this requires the ability to offer distributed access to legacy information systems. Most of these are not capable of offering simultaneous access to large numbers of users; making this shift may require building new systems from scratch.

However, offering online capabilities may receive a boost as systems are upgraded to comply with upcoming Health Insurance Portability and Accountability Act (HIPAA) regulations. As health plans prepare for the future they must keep an eye on the growing demand in the marketplace for online capabilities.

There are additional, external barriers to overcome in creating true payor-provider interconnectivity. In order to win over physicians, connectivity solutions must allow physician offices to connect conveniently with the majority of payors through a single, unified system. Citing a physician who has to deal with 50 payors, Dennis Streveler, Senior Strategist at connectivity provider WebMD says, "I will succeed only if I can give that doctor the critical mass of connectivity he needs." Because of this problem, connectivity vendors have begun to partner with health plans to drive critical mass. A related and recently announced effort is MedUnite, a coalition of seven national health plans to develop a joint venture interconnectivity company. It will attempt to address these physician needs for maximal payor connectivity directly, through an ambitious alliance of competitors.

### **Hospitals**

What impact physicians online will have for most hospitals and medical centers remains unclear over the near term. Now most hospitals are struggling to achieve or maintain profitability in a difficult reimbursement environment. They have not focused on developing or implementing an Internet strategy to establish connectivity with providers and patients. While there is a financial incentive to create links with payors and supply vendors, the financial justification for establishing links with providers and patients is not clear. Despite the lack of online strategies within most hospitals directed at the physician community, as more and more physicians use the Web to connect with patients and providers, hospitals will have a more receptive audience waiting to use these services when the time arrives to extend hospital information systems and services to the outpatient setting. Potential online services for physicians include access to lab results, emergency medical profiles for patients, remote monitoring of critical patients, and access to historical medical records.

### **Pharmaceutical Companies**

Despite the recent push to build brand awareness with the consumer audience, there is widespread agreement that physicians still control most of the decisions in health care when it comes to pharmaceuticals. They will continue to be critical to a successful pharmaceutical sales and marketing strategy, in addition to an effective consumer "push" strategy.

So how does the Internet impact this relationship and what does this mean to pharmaceutical companies? First and foremost, pharmaceutical companies must realize the value of the Internet as a channel to reach physicians who have adopted the Internet as an information access and retrieval tool. Given that almost 75 percent of physicians use the Web to search a literature database or access a professional journal online at least once a month, extending marketing, branding, and relationship building to this emerging channel is critical. Pharmaceutical companies must also evaluate the potential of the Internet in the areas of online prescribing, online marketing, and care management/compliance programs.

In addition to the emerging areas described above, one must not forget that close to 40 percent of daily users are already visiting pharmaceutical manufacturer Web sites. Is the information presented relevant and useful to this audience? Considering that most of these physicians are there to learn about new drugs, get prescribing information, or learn more about drugs in the pipeline, pharmaceutical companies must evaluate the content and investment relative to the target audience. How much is it worth to have five to ten minutes of dialogue with an online physician visitor? The Internet offers a channel where physicians can learn more and request additional information when and where it is most convenient for them.

## Proposed Treatment and Prognosis: Implications for Internet Companies

The survey results show a clear interest in and need for more evolved applications online for the medical community. While most online activities today are relatively static, there is certainly an opportunity to develop innovative applications that will improve medical practice. In a recent *Health Affairs* article entitled "Patients, Physicians and the Internet," Jerome Kassirer, M.D., former editor of the *New England Journal of Medicine*, offered this prescription for dealing with the current problems afflicting physicians and the Internet:

*Finally, the ultimate barrier is not the physician, the patient or legalities. To transform care will require new, sophisticated software that permits unconstrained interaction with computers by voice, that incorporates patient information from disparate electronic sources, that unerringly solves clinical problems, and that makes information searching reliable, focused, and fast. With such tools, resistance will vanish.*

— Kassirer, *Health Affairs*, November/December 2000

This is the major challenge for the Internet company trying to find the elusive "killer application" for physicians. What is it? As expected, the answer is not as clear as a list of the top five services that physicians are waiting to adopt. First and foremost, online applications – and the Internet in general – must provide a real value proposition before users embrace it on a larger scale in clinical practice. By that we mean online tools and services must show a demonstrable return when it comes to saving time, reducing expenses, increasing revenues, or optimizing quality. In many cases, the real beneficiary of these online services – such as e-prescribing – may not be the actual physician. It may be the insurance company that benefits from reduced transcription errors or lower paperwork costs associated with

processing claims. It could also be the pharmaceutical company, which might be able to reach physicians at the order entry screen where the decisions will be made. In these situations, the doctor may not be the one reaping the bulk of the rewards. In the case of e-prescribing, a very quick and easy process (writing a quick note on paper and handing it to the patient) has been replaced with using a PDA to enter an order for a specific drug. In this situation the third party might need to reimburse or provide incentives to physicians to adopt these online services.

In addition to meeting physicians' economic requirements, attention should be given to their privacy and security concerns. Our results show that these are primary barriers for physicians regarding adoption of online clinical applications. Even with advances in this area, attitudes will not change overnight. Companies offering online services and applications must take the high road when it comes to addressing and minimizing these fears. Technology offers extremely high levels of protection against unauthorized access. Most security breaches of online information are due to human error rather than technological glitches. Application and product vendors must be willing and able to demonstrate that every possible precaution has been taken to make sure data can and will be accessible only to authorized individuals. The survey results also show that this concern could potentially be reduced through affiliations with professional societies and leading medical centers. Since these are the most trusted sources for the physician community, it makes sense to collaborate with these organizations to establish a level of trust in online services.

## Proposed Treatment and Prognosis: Societal Benefits and Public Financing

Public policy-makers can help speed-up the physician acceptance and adoption of the Internet by promoting a Web-friendly regulatory and legal environment. In addition, maximum societal benefit from the Internet may require public investment. Some public financing may be necessary to encourage the expanded use of the Internet in health care. According to Laura Tyson, formerly chair of President Clinton's Council of Economic Advisors:

*Inadequate information systems are a prime reason why administrative systems account for an estimated 15 percent to 20 percent of total healthcare spending, with perhaps an additional 20 percent reflecting unnecessary or inappropriate care. The Internet has enormous potential to trim these costs by transforming the practice and structure of the industry.*

*— Tyson, Business Week, 7/24/2000*

The previous section focused mostly on the private market benefits of investing in Internet applications and services for the medical community. However, as Wall Street and private venture capitalists reduce funding in many areas of the Internet economy, including e-Health, it is not clear who will be able to foot the bill for these infrastructure investments. While payors, providers, and pharmaceutical companies will invest to the extent that they can benefit directly, for the full value of the Internet to be realized in health care, public sector funding may be critical in the future.

## Conclusion

*Taking the Pulse* has been our look at how physicians are using the Web today, the barriers to using specific services and applications online, and how physician attitudes, together with other trends, may affect usage over the next two to five years. We know doctors are online. We also know they have not embraced administrative or clinical applications online in a major way. However, there may be substantial opportunities for those willing to invest time and capital to help migrate historically offline processes and communications into the online arena. Those who stand to benefit must also be those who invest the time and money to encourage adoption of these services. Well designed online services, applications, and technology can help physicians save time, reduce costs, increase professional revenues, and improve quality. Ultimately, this will benefit society as a whole.



## About the Study

**CONTEXT.** Despite several recent attempts to understand physician adoption and utilization of the Internet, no comprehensive study to date has been completed to accurately track behavior, identify barriers, and predict future trends.

**OBJECTIVE.** Cyber Dialogue, in conjunction with Deloitte Research, had the stated objective to conduct the largest landmark study analyzing physician adoption of the Internet, how that adoption - or lack thereof - has impacted a clinician's daily workflow, and how the Internet will affect doctor-patient-payor relationships over the next two to five years.

**DESIGN, SETTING, AND PARTICIPANTS.** To achieve this objective Cyber Dialogue surveyed - via in-depth telephone interviews - a nationally representative sample of 1,200 practicing physicians in the U.S. in June and July 2000. The research was described as a study evaluating "communication channels" in medical care to avoid sample bias either by attracting Internet enthusiasts, or missing Internet-phobic physicians. The sample was drawn from the American Medical Information (AMI) physician database, the most comprehensive and updated database of physicians in the U.S. today. Quotas were established to include samples of primary care physicians (family medicine, internal medicine, pediatrics, and general practice) as well as representative groups from 11 identified specialist groups (allergists, cardiologists, oncologists, OB/GYN, neurologists, endocrinologists, infectious disease, pulmonologists, rheumatologists, urologists, and surgeons). A category of "other" physicians was also included to maintain a nationally representative sample.

The final data set was then weighted to reflect national norms and account for minor sample variance with respect to age (older physicians slightly oversampled) and gender (males slightly oversampled). We are confident that the final data set resulted in a "representative" sample based on national norms for key metrics including age, gender, practice setting, and region. The data set was also benchmarked against key metrics (education, income, age) in the Cybercitizen Health database as well as Cyber Dialogue's *American Internet User Survey*, to place the findings in context to past normative data. In conclusion, we can state with confidence that the data presented in these pages are an accurate reflection of practicing physicians in the U.S. today, with a margin of error of +/- 2.8 percent at the 95 percent confidence interval.



For more information about the complete *Taking the Pulse* written analysis and survey database, contact Scott Haiges at 212.651.7032 or [shaiges@cyberdialogue.com](mailto:shaiges@cyberdialogue.com).

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## About Cyber Dialogue's Health Practice

Cyber Dialogue's Health Practice provides a comprehensive Analytical eCRM solution that enables many of the largest health care companies in the world to identify, acquire and retain their most valuable customers. With more than six years of experience in the online health sector, Cyber Dialogue offers unmatched expertise and strategic insight to help our clients manage the business complexities of the health care field, with an in-depth understanding of consumer interaction across all condition types, privacy and regulatory issues, and the product manager's need for demonstrable ROI. Through advanced data analysis, ROI measurement and database marketing, Cyber Dialogue's Health Practice serves its clients at every point of the eCRM process. Health Practice clients include Pfizer, Merck-Medco, Bristol-Myers Squibb and Roche Diagnostics.

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